

***A COMPARATIVE ANALYSIS: VYGOTSKY'S SOCIOCULTURAL THEORY AND
MONTESSORI'S THEORY***

KUBRA KIRCA DEMIRBAGA

DURHAM UNIVERSITY

Abstract

This article aims to review Vygotsky's sociocultural theory and Montessori's theory in terms of the connection between child development and learning, the effects of environment on the learning process, the structure of the classroom and the content of the curriculum, the roles of student, teacher and play in the learning process by way of comparing one to the other. Before the analysis, the social backgrounds of Vygotsky and Montessori are briefly explained to allow for consideration of their positionalities in relation to their theories. This paper concludes that despite belonging to different eras, Vygotsky and Montessori took inspiration from one dream, which revolved around the improvement of society through education. However, while Vygotsky looks for education in a natural environment, Montessori creates an artificial environment for education. Thus, although they share the same dream, their visions are different.

Keywords: Vygotsky's sociocultural theory, Montessori's theory, child development, learning process

Introduction

The concept of learning is key in psychology and education and has wide applications in everyday life. There is no consensus on the definition of learning and how it happens, or what is the role of the mind in the learning process (Hollingworth 1932). The methods and techniques of teaching and training, and approaches to guidance clarify this confusion and continue to evolve in an effort to develop an optimal learning process (Hollingworth 1932).

Human nature was mostly a topic of philosophical thought until the second half of the 19th century. For example, Immanuel Kant (1786) asserted that ideas of space and time originate from the concepts of quality, quantity as constructed by the human mind (cited by Watkins and Stan 2003). Similarly, John Locke (1700) argued that the origins of ideas are produced through experiences (cited by Kochiras 2009).

At the end of the 19th century, human nature was the subject of a range of psychological studies. For instance, Gustav Fechner (1860) focused on the mathematical relationship between human mental functioning and physical events, between the inner world and the external based on the amount of stimulation of a sense (cited by Pojman 2008); Ivan Sechenov (1863) proposed a physiological theory of how reflexes of the brain (sensory stimulation, a central conscious impression and the resulting movement) worked within the normally functioning individual (cited by Sechenov, n.d.). Overall, these studies draw attention to the critical role of environmental effects on people's learning.

Developmental approaches to learning processes have evolved over time and these differences are reflected in development and learning theories. For example, Lev Vygotsky examined Marxist thought as a source of data to show the effects of society on learning and proposed his own theory, the sociocultural theory of higher mental processes (Vygotsky 1978). Vygotsky believed that the internalisation of culture occurred with sign systems, which caused behavioural transformations and formed the bridge between early and later forms of individual development. In this way, for Vygotsky, in the tradition of Marx and Engels, development of individuals is conditioned by the society and culture that surrounds the individual.

Vygotsky relied on Marxism in the Soviet Union of the 1920s as a significant theoretical and methodological resource while he was arguing for a historical approach in his conceptualisation of mental development (Yetkin Ozdemir 2011; cited by Jovanovic 2015). Vygotsky lived in a society where Marxist ideology advocated for social transformation as a

condition for individual change (Jovanovic 2015). It is clear that Vygotsky's own living conditions affected his views related to his theory. Yaroshevsky (1989) explains this effect with these words: "Vygotsky referred to his theory as cultural-historical. This term stressed that the factors determining the individual's life activity and the wealth of his psychical world were produced by the historical development of culture" (cited by Jovanovic, 2015, p.11).

Another approach to the process of learning and development was offered by Maria Montessori (1912), who developed a more connected theory of child development from infancy to adolescence. Montessori was a doctor, and she was particularly interested in nervous and mental diseases in children and studied the special treatment methods for mental diseases with her colleagues. She later decided to concentrate on the education of mental deficiency in children rather than medical treatment and developed a new approach to education: her theory encompasses all aspects of human potential, character, moral development and spiritual growth (Vardin, 2003). Moreover, Montessori focused on mental deficiency and students with special needs which concluded in the development of special education pedagogy. Today, Montessori practices (such as child study, a focus on individualisation and the use of manipulative materials) and special education have been explicitly combined in many cases (Cossentino 2010). Montessori training is seen as a source of inspiration for the developmental approaches, learning process and teaching methods which may change according to the age or experience.

1. Connection Between Child Development and Learning

Vygotsky (1997) advocates that learning gives direction to development through social interaction. He claims a general law of cultural development:

Every function in the cultural development of the child appears on the stage twice, in two planes, first, the social, then the psychological, first between people as an intermental category, then within the child as an intramental category. This pertains

equally to voluntary [focused] attention, to logical memory, to the formation of concepts, and to the development of will (p.106).

This means that higher cognitive functions such as mediated perception, focused attention, deliberate memory, and logical thinking are social in two ways. Firstly, it is possible that they can be transmitted from one generation to the next through learning. Secondly, these cognitive functions can be developed through active social interactions (cited by Kirch 2014). It can be said that higher cognitive functions do not arise spontaneously with our experiences, rather, this is a conscious achievement which belongs to the individual in the social context. That is, your perception of the world around you is shaped by what you have learned in the society that surrounds you.

In this context, both Vygotsky and Montessori advocate that the cognitive problems of children can be relieved through education. However, there is an important difference between them. Whilst Vygotsky focuses on the effects of teaching and learning on child development, Montessori focuses on normalization of development. That is, Montessori tries to eliminate mental impairment because learning is *only* possible with a normal development for her. On the other hand, Vygotsky believes that mental impairment can be eliminated with learning, in other words, learning is included in the development process. Actually, the approaches of both Vygotsky and Montessori are possible simultaneously. That is, while normal development positively affects learning, learning also positively affects development. There is an interaction between learning and development rather than the distinction about *after* or *before*.

The main principle beyond Vygotsky's theory is that a child's social environment is the basic source of his or her development. Therefore, he accepts that there is a mechanism called 'social situation development' as the child grows (Bodrova 2003). Vygotsky (1997) explains with these words:

We might say that all higher functions were formed not in biology, not in the history of pure phylogenesis, but that the mechanism itself that is the basis of higher mental

functions is a copy from the social. All higher mental functions are the essence of internalized relations of a social order...(p.106).

Vygotsky emphasises that the interaction with the environment is the precondition to have higher cognitive functions. With this viewpoint, Vygotsky also accepted the interaction as a priority for child development, while Montessori saw "development as unfolding the sequence of stages programmed in the human species" (Bodrova 2003, p.30).

2. The Perspectives of Vygotsky and Montessori on Education

Vygotsky (1997) defines education as “the artificial mastery of natural processes of development” (p.88). That is, according to him, the development is possible in nature, but the level of the development is enhanced by a set environment or opportunities. Vygotsky perceives the classroom as a social environment and focuses on the effects of this environment on self-consciousness. Similarly, Montessori thinks that the school encourages the development of a sense of responsibility among children (Certini 2013). Furthermore, supporting student autonomy is fundamental at all levels of Montessori’s education and this is now widely accepted as one of the most effective ways to enhance motivation (Montessori 1912; Murray 2011). In Montessori’s theory, the student acts independently and constructs their potential with their own efforts (Montessori 1912; Murray 2011). That is, the child is his or her own teacher.

In this context, it can be argued that the goals of the curriculum are set according to children’s interests. Montessori’s students have opportunities for autonomy in many aspects of their daily lives and learn to attribute success and failure to their own actions based on experiences of their own decisions. In line with this, Montessori (1989) highlights that “Our pupils [are] equipped in their whole being for the adventure of life, accustomed to the free exercise of will and judgment, illuminated by imagination and enthusiasm” (cited by Murray 2011, p.24). In Montessori education, the atmosphere of student autonomy is created, where students’ control of their educational lives and convenient goal-setting are essential components.

Montessori points out the question “why?” and advises teachers to give children reasons for the significance of goals (Murray 2011). Hence, Montessori cares about 'critical thinking'. Montessori advocates the idea of a “shift from individual formation to development as social beings” (cited by Murray 2011, p.31). Indeed, Montessori education suggests that the power of social relationships should be used to foster children’s motivation. In this context, the elementary Montessori classroom has three activities which facilitate relatedness with other students: the three-year cycle in each classroom, freedom to work in small groups, and class meetings (Murray 2011).

In the first one, each child spends three years in the same classroom, and in this way, social relationships develop among students. This system also gives the teacher a chance to get to know the students (Murray 2011). This can help the teacher identify specific needs of each individual student and tailor the type of help or direction they might need to them. Small group working provides an opportunity to talk with and help each other. As Lillard (1996) indicates “the Montessori elementary plan uniquely meets the children’s need in the second plane to form themselves as social beings, capable of contributing to others, both following and leading in group effort” (cited by Murray 2011, p.31). Lastly, class meetings provide a forum for the evaluation of the current situation and for resolving disputes (Angell 1998). Indeed, this forum provides a platform for the learner’s discussion of social problems and conceptualisation of effective solutions on their own. That is, there is preparation for communal living as a citizen, and in this process, the given message is that if you live in a society, you cannot ignore the existence of other people, including the opinions of other people who live there too.

In Montessori elementary education, all students work individually or in a small group suitable for their own level and pace. Also, they can decide how long to spend working on a project. The children have the right to choose their topics of research, and they accept all responsibility for their work in the elementary classroom (Murray 2011). That is, there is a curriculum which takes

shape according to the wish of the student. One of the most important points of this curriculum, there is no common evaluation criteria valid for all students, each student is encouraged to evaluate his/her own success based on his/her goal.

On the other hand, in the Vygotskian approach, the curriculum begins with the definition of major concepts that function as combining threads in the subject (Gredler 2012; Kozulin 2004). This means that it is focused on the pre-concept level and then extended to conceptual thinking level. To make it clear, for example, in economic history, *trade* is one of the key concepts. Consistent with Vygotsky's approach, firstly the verbal definition of the concept of *trade* must be done, it would likely begin with "the buying and selling of the commodities or the bartering of goods" (Webster's New World College Dictionary 1997, cited by Gredler 2012, p.127). After this definition, trade can be expanded to diverse forms in more detail such as free trade zones. Vygotsky's approach to curriculum firstly provides an understanding of the function of the concepts by students, so the functional understanding of them develops. Secondly, it provides an opportunity to learn the diverse effects of concepts, in other words, it helps to increase the potential of multi-directional thinking of students.

In Montessori classrooms, there is no instruction in the traditional sense to force children to learn the same target concepts in the same way. There is always an observer in the classroom, not a teacher. His/her observations are crucial in leading the child to the appropriate stage of development he/she has reached. Thus, each child is introduced to new material (Murray 2011). That is, the curriculum is adaptable to each child's own competence rather than a set timeline. At this point, can it be said that there is a different curriculum for each child?

In addition to that, in a Montessori classroom, if a child is gifted in language skills, however, weaker in maths, that child will have the opportunity to work with the advanced sentence analysis materials by being given extra time in the same classroom among his peers (cited by Murray 2011). That is, an inclusive education approach is supported.

Montessori believes that education starts with muscular movements and supports all kinds of sensory activity, inspired by her colleague, Edward Seguin, who worked the special treatment methods in mental diseases (Montessori 1912). Afterwards, education involves different stages; in Montessori's words, "from the education of the senses to general notions, from general notions to abstract thought, from abstract thought to morality" (Boyd 1914, p.152). However, the most important part of the initial learning is the training of the body. In Montessori schools, the learning of reading, writing, and arithmetic take place *after* the training of the senses (Boyd 1914). That is, Montessori firstly focused on the development of fine motor skills which lead to children's writing ability. Additionally, according to Montessori, writing should be taught before reading, and not after it. In Montessori's words:

This order is that children can put together the letters constituting a word much more easily than they are formed, in writing they are translating a succession of sounds into a succession of symbols; but in reading they have the more difficult task of comprehending words as a whole, and relating them to the objects they denote (cited by Boyd 1914, p. 175-176).

On the other hand, Vygotsky does not mention the training of the body or senses. Vygotsky takes inspiration from the Montessorian method of the teaching of writing and comments that learning to write is essential for children's mental functioning and development (Bodrova 2003). However, there is a difference at this point. According to Vygotsky, children's writing at the early stage is a symbolic representation of a purposeful play and drawing, thus, the letters should be taught later.

In Montessori's method, the environment plays a crucial role. Firstly, the environment should allow the free development of the child, and the child should be able to perform activities freely (Certini 2013; Cossentino 2010). Montessori advocates that a dispersed and confusing environment would reflect on the child's mind, and for this reason, she indicates that a suitable environment should be created for children. However, admittedly, daily life is not as predictable

or harmonious as the environment Montessori wanted to have created for her pupils, therefore how children will respond to a mishap or a negative circumstance in their daily lives remains unanswered.

Similarly to Montessori, Vygotsky believes that socialisation has a crucial role in child development and uses the phrase, 'zone of proximal development' to describe the background of learning (Bodrova 2003; Gredler 2012; Parker 1979; Vygotsky 1978). In this approach, Vygotsky focuses on the space between the lower-level reflecting, which means independent skills, and the higher-level reflecting, which refers to skills developed with assistance from the other who is more knowledgeable (Li 2007). According to him, social stimulation is more dominant than the independence of children and autogenous level of success. This 'zone' means the key point for human cultural achievement.

3. The Roles of the Student, Teacher and Play

Vygotsky (1997) indicates that the teachers' role is to help students access the world, and the achievement of the student depends on the quality of the mediation. That is, a teacher is a guide for Vygotsky. Similarly, Montessori accepts the role of the teacher as one of a guide. Moreover, some Montessori schools prefer to use the term 'guide' rather than 'teacher' to emphasize the child's role in his own learning (Murray 2011). The role of a Montessori teacher involves contributing to student motivation through monitoring each individual student's interests (Bagby and Sulak 2010). Montessori advises that teachers bear in mind this principle:

It is not a question of giving a child a knowledge about the qualities of things, such as size, shape, and colour, by means of various objects. Nor is it her aim to train a child to use the materials correctly...The objects in our system are, instead, a help to the child himself. He chooses what he wants for his own use, and works with it according to his own needs, tendencies, and special interests. In this way, the objects become a means of growth. The principal agent is the object itself and not the instruction given by the teacher. It is the child who uses the objects; it is the child who is active, and not the teacher (Montessori 1967, cited by Kirch 2014, p.246).

In Montessori education, meaning and interest are clues for teachers to determine the content of lessons and follow and monitor a student's engagement (Montessori 1989, cited by Murray 2011). On the other hand, Vygotsky expands the role of the teacher even further to include the teaching of metacognitive strategies by presenting cognitive tools to students and use those strategies (Kirch 2014). According to Vygotsky, the role of the teacher is also to equip the child with cultural tools which help solve problems and contribute to mental development. The role of the child, on the other hand, is to acquire these tools and use them both within the field of the initial problem and later outside (Bodrova 2003).

In Montessori classes, the classroom layout is different; there is typically no desk which belongs to the teacher at the head of the classroom; generally, the teacher is found in some corner of the room (cited by Murray 2011). That is, the teacher is not seen as the focal point. Montessori (1966) describes the role of the teacher with these words "... the teacher without a desk, without authority, and almost without teaching, and the child, the centre of activity, free to move about as he wills and to choose his own occupations" (cited by Murray 2011, p.26). In this context, the child is encouraged to have self-direction to work independently without any interference.

Vygotsky believes that play is one of the most important learning experiences as it takes into consideration cultural signs and symbols, and play affects mental processes during the preschool years. He highlights the importance of play:

...play creates a zone of proximal development of the child. In play a child always behaves beyond his average age, above his daily behaviour; in play, it is as though he were a head taller than himself. As in the focus of a magnifying glass, play contains all developmental tendencies in a condensed form and is itself a major source of development (Vygotsky 1978, p.102).

Vygotsky thinks that play provides a good opportunity, particularly for young children, for self-regulatory behaviours subject to roles and rules (Bodrova 2003). Montessori also concentrates on self-discipline in child development. However, there is a big difference between their

perspectives towards play. Although Vygotsky sees play as a tool for gaining self-regulation, Montessori advocates that self-regulation can be gained through a purposeful study of a material, which is more necessary than play (Bodrova 2003). In other words, for Vygotsky, while play is an important element of learning, for Montessori, it is not even among the essential components of the classroom.

Conclusion

In summary, this paper presented a comparative analysis of Vygotsky's and Montessori's theories in terms of child development, learning process, the effects of the environment on learning, the structure of curriculum and classroom, the roles of the student, teacher and play by considering the effects of their social backgrounds on their theories.

In this analysis, it is seen that while Vygotsky looks for education in a natural environment, Montessori creates an artificial environment for education. Therefore, in Montessori's theory, everything can be taken under control, however, in Vygotsky's theory, children can learn how to react to unusual situations. One of the significant debates is whether development *leads* to learning, or does learning *lead* to development? At this point, while Vygotsky says that the child develops as long as he or she is learning, Montessori advocates that the learning potential of the child increases as long as he or she is developing.

Vygotsky does not approach the individual on an individual basis, he focuses on the individual in the social context as a whole. Therefore, he links the quality of the development and the environmental opportunities of the individual and draws attention to the '*zone of proximal development*'. On the other hand, according to Montessori, the potential of each individual depends on the effort the student made.

In Montessori education, an environment, where the student autonomy is dominant, and the curriculum which depends on the student's interest and needs are created. For Vygotsky, the

outline of the classroom is not clear like Montessori. One question that needs to be asked, however, is how much it is possible to insert society and culture into the classroom whose boundaries are rigid. In terms of curriculum, Vygotsky gives a start with the definition of the major concepts of the subject by focusing firstly on the pre-concept level and then the extended conceptual thinking level. Another significant point, while Vygotsky views the teacher mostly as the guide that supports mental development, Montessori sees teachers as a motivating guide.

Lastly, although both believe in the importance of play, for Vygotsky, play is a tool for learning, for Montessori, play is not a meaningful work, it is mostly an amusement. In fact, this approach is a result of differentiated environments as natural and artificial for education. Last but not least, in the above-mentioned differences between the theories of Vygotsky and Montessori, is the role of having different social backgrounds (such as living in a Marxist society or working with mental deficits).

It should not be forgotten that both are confident that cognitive problems will be alleviated through education and society also will be improved through education. This means they share in the same dream although having different visions (Bodrova, 2003).

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About the author:

Kubra Kirca Demirbaga graduated from the branch of Psychological Counselling and Guidance, Istanbul University, for her bachelor's degree. She worked for three years as a psychological counsellor in Turkey and get the IQ tests education such as WISC-R, KBIT-2, and WNV. She completed her master's degree in Psychology and Education at the University of Sheffield, and then the Research Training and Researcher Development Programme at Newcastle University. Now, she is a PhD student at Durham University. Her research area is about character education of gifted and talented children.

E-mail: kkircademirbaga@gmail.com